

**What is claimed is**

1           1. A portable liquid level detector, comprising:  
2           a portable casing;  
3           a power supply unit disposed in the casing;  
4           a sensor coupled to the power supply unit to sense whether  
5 a capacitance within a container is changed and to output a  
6 enable signal when the capacitance has changed; and  
7           a signal device coupled to the sensor that outputs a signal  
8 after receiving the enable signal.

1           2. A portable liquid level detector as claimed in claim 1,  
2 wherein the signal device is an alarm device.

1           3. A portable liquid level detector as claimed in claim 1,  
2 wherein the signal device is a light emission device.

1           4. A portable liquid level detector as claimed in claim 3,  
2 further comprising a resistor coupled to the light emission  
3 device to limit a current flowing through the light emission  
4 device.

1           5. A portable liquid level detector as claimed in claim 3,  
2 wherein the light emission device is a light emission diode.

1           6. A portable liquid level detector as claimed in claim 2,  
2 wherein the alarm device is a buzzer.

1           7. A portable liquid level detector as claimed in claim 1,  
2 wherein the sensor is a capacitive proximity switch.

1           8. A portable liquid level detector as claimed in claim 1,  
2 wherein the power supply unit is a battery set.

1           9. A portable liquid level detector as claimed in claim 1,  
2 further comprising a switch coupled to the power supply unit to  
3 control the electrical conduction between the power supply unit  
4 and the sensor.

1           10. A portable liquid level detector, comprise:  
2           a portable casing;  
3           a battery set deposited in the portable casing;  
4           a capacitive proximity switch coupled to the battery set  
5 to sense whether a capacitance within a container is changed and  
6 to output a enable signal when the capacitance has changed;  
7           a light emission diode coupled to the capacitive proximity  
8 switch that illuminates after receiving the enable signal;  
9           a buzzer coupled to the capacitive proximity switch that  
10 sounds after receiving the enable signal;  
11           a resistor coupled to the light emission diode to limit a  
12 current flowing through the light emission diode; and  
13           a switch coupled to the battery set to control a electrical  
14 conduction between the battery set and the capacitive proximity  
15 switch.

1           11. A method of detecting liquid level in a container,  
2 comprising:

3       moving a capacitive proximity switch into proximity of a  
4 container contains a liquid; and  
5       moving the capacitive proximity switch upward and downward  
6 relative to the container until a difference in capacitance is  
7 detected.

1       12. The method as claimed in claim 11 wherein the container  
2 is nonmetallic, and the step of moving the capacitive proximity  
3 switch into proximity of the container brings the capacitive  
4 proximity switch into contact with the container.

1       13. The method as claimed in claim 11 wherein the container  
2 is metallic, and the step of moving the capacitive proximity  
3 switch into proximity of the container brings the capacitive  
4 proximity switch close to but not contact with the container.

1       14. A method of detecting a clog jammed in a pipe,  
2 comprising:  
3       moving a capacitive proximity switch into proximity of a  
4 pipe with a clog; and  
5       moving the capacitive proximity switch upward and downward  
6 relative to the pipe until a difference in capacitance is  
7 detected.

1       15. The method as claimed in claim 14 wherein the container  
2 is nonmetallic, and the step of moving the capacitive proximity  
3 switch into proximity of the pipe brings the capacitive  
4 proximity switch into contact with the pipe.

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1           16. The method as claimed in claim 14 wherein the container  
2 is nonmetallic, and the step of moving the capacitive proximity  
3 switch into proximity of the pipe brings the capacitive  
4 proximity switch close to but not in contact with the pipe.